REMARKS

This application has been carefully studied and amended in view of the Office Action dated November 6, 2007. Reconsideration of that action is requested in view of the following.

Claims 19-36 have been replaced by Claims 37-53 to advance the prosecution of this case. This new set of claims includes independent Claims 37 and 48. Claim 37 is a combination of former Claims 19 and 21 while Claim 48 is a combination of former Claims 19 and 20.

With regard to Claim 37 it is also noted that in addition to including the features of former Claim 21, Claim 37 now includes the feature of the gas stream comprising methanol vapor and molecular oxygen is preferably fed radially into the gap between the heat-exchange plates. This feature had been part of claim 3 in the originally filed application. Further, this feature can be found in the description on page 6, lines 8-9 and on page 14, lines 20-21.

It is respectfully submitted that parent Claims 37 and 48 and their dependent claims are patentable over the prior art and in particular in view of Natta, et al. in view of Filippi, et al.

Natta et al. disclose a process for preparing a catalyst consisting of MoO_3 and Fe_2O_3. the catalyst is used for the production of formaldehyde by oxidation of methanol. However, Natta el al. does not disclose the type of reactor which can be used. In particular Natta et al. do not disclose a reactor having heat-exchange plates which are arranged in the longitudinal direction of the reactor. Therefore, the independent claims 37 and 48 distinguish over Natta et al.

Filippi et al. describe heat-exchange plates which can be used for conducting reactions

under isothennal conditions. However, Filippi et al. do not disclose explicitly to use the heat-exchange plates in a reactor for preparing formaldehyde. Further, Filippi et al. do not disclose a specific arrangement of heat-exchange plates. Therefore, the independent claims 37 and 48 also distinguish over Filippi et al.

Natta el al. disclose a process for the preparation of formaldehyde by gas-phase oxidation of methanol vapor. The reaction takes place in the presence of a catalyst comprising iron and molybdenum. To carry out the process in a reactor having heat-exchange plates which are arranged in the longitudinal direction of the reactor is not disclosed by Natta el al. As well, there is no hint given to those skilled in the art to carry out the process in a respective reactor.

A heat-exchange plate which can be used in a reactor for carrying out isothermic chemical reactions is disclosed by Filippi et al. However, there is no hint given by Filippi et al. how to arrange the heat-exchange plates within the reactor.

Filippi et al. only disclose one heat-exchange plate. There is no hint given to those skilled in the art, that more than one heat-exchange plate can be used in a reactor. Further, there is no hint given how to arrange the plates within the reactor.

Particularly, there is no hint given to those skilled in the art to arrange the heat-exchange plates radially in a cylindrical reactor to leave a central space and a peripheral channel free in the cylindrical reactor and to feed the gas stream comprising methanol vapor molecular oxygen

radially into the gap between the heat-exchange plates.

The radial flow of the reaction medium between the radially arranged heat-exchange plates has the advantage of a low pressure drop. Since the oxidation of methanol occurs with an increase in volume, the pressure conditions prevailing in the case of centrifugal transport are particularly advantageous because the distances between the heat-exchange plates increase towards the outside.

Additionally, when the reaction medium flows radially through the spaces between the radially arranged heat-exchange plates, the heat transfer area available changes continuously. Thus, when the reaction medium is transported centrifugally, the transfer area decreases continuously going from the center to the outside. Also, the flow velocity decreases from the center to the outside. As a result, optimization of heat transfer is achieved in the present reaction with decreasing evolution of heat as the reaction progresses.

Since there is no hint given by Filippi et al. that it is advantageous to arrange the heat-exchange plates radially to leave a central space and a peripheral channel free in the cylindrical reactor and to feed the gas stream comprising methanol vapor molecular oxygen radially into the gap between the heat-exchange plates, claim 37 should be patentable over the combined reference teachings.

Additionally, since there is no hint given by Filippi et al., to arrange the heat-exchange plates parallel to one another in the reactor, the new independent claim 48 should be patentable as well.

In view of the above remarks and amendments this application should be passed to issue.

Respectfully submitted,

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